



New Climate Zones in the IECC 2004 Supplement

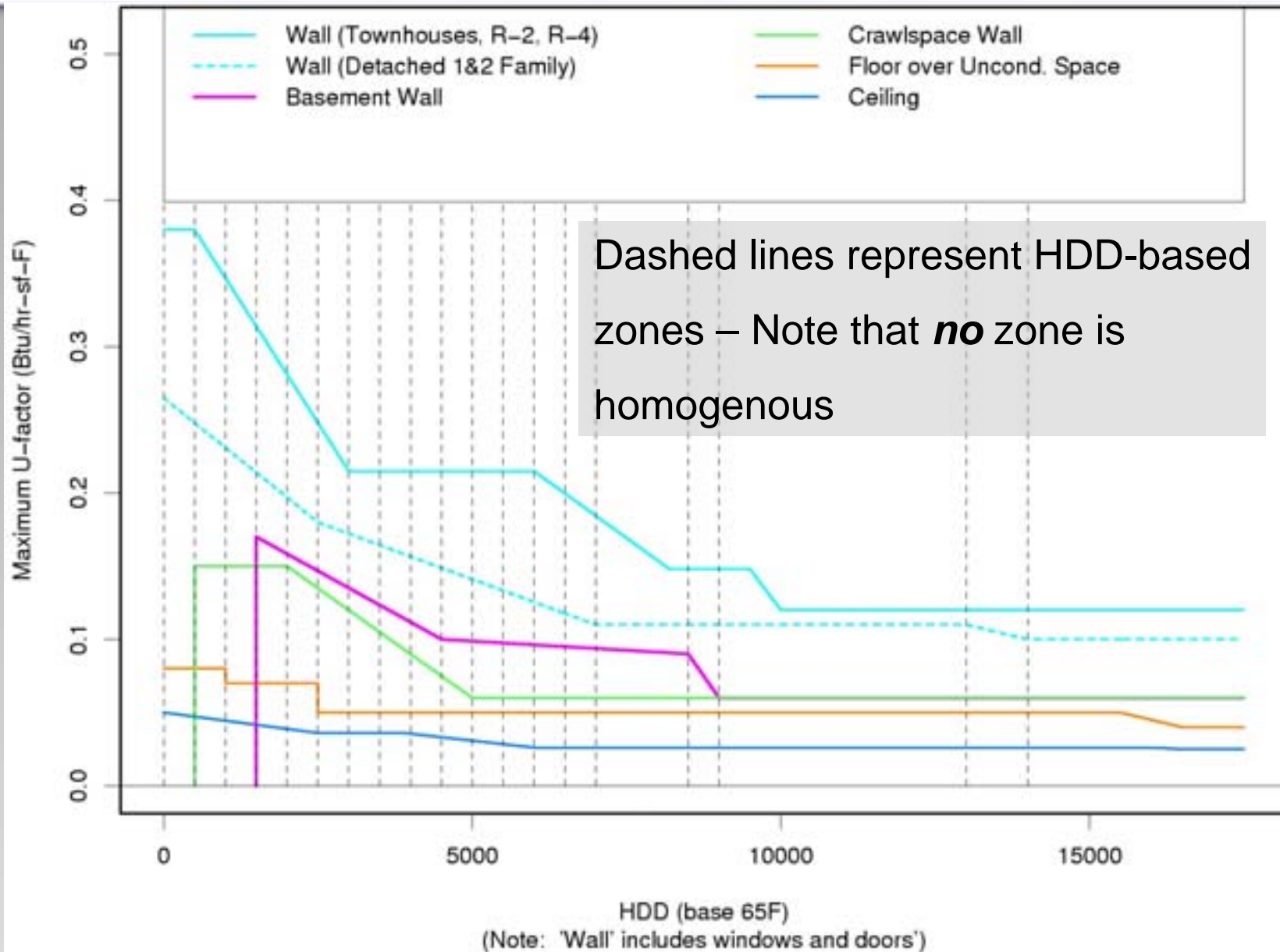
**2005 National Workshop
Building Energy Codes Program
June 28, 2005**

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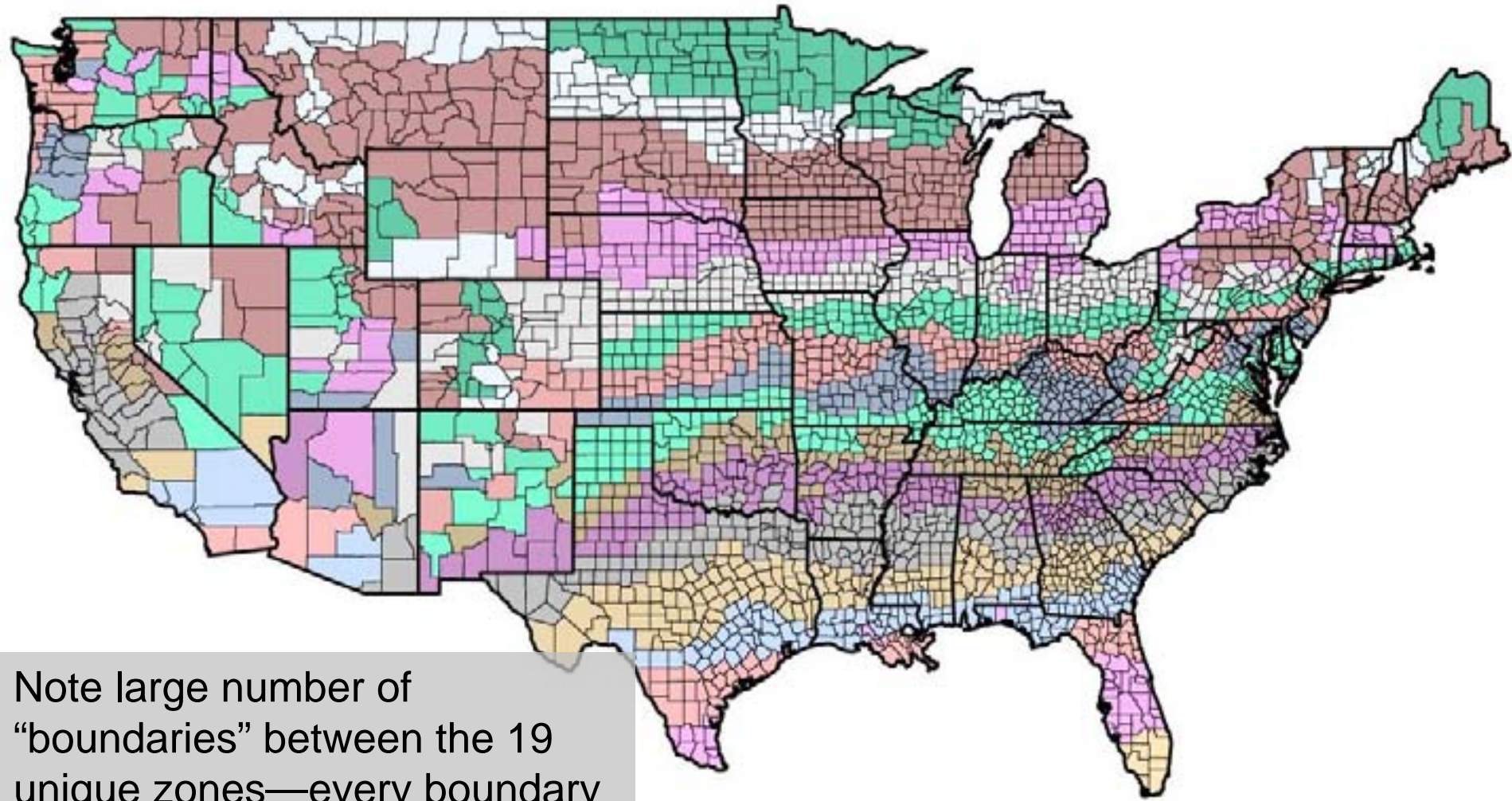
Why Did DOE Change the Climate Basis?

- Old scheme:
 - Code requirements varied continuously w/HDD
 - No geo-politically defined zones (except as compliance tools)
 - Required access to climate data for **all** locations
 - Every house had potentially unique climatically-based requirements
 - Compliance-oriented HDD zones were too numerous
 - Cooling drivers were not accounted for
 - Residential and commercial zones differed
- New scheme
 - All boundaries on state/county lines
 - Fewer overall zones
 - Cooling and moisture directly considered
 - No climate data required (in U.S.)
 - Residential and commercial use the same zones

Climate Zones—Before (Requirements varied continuously w/HDD)

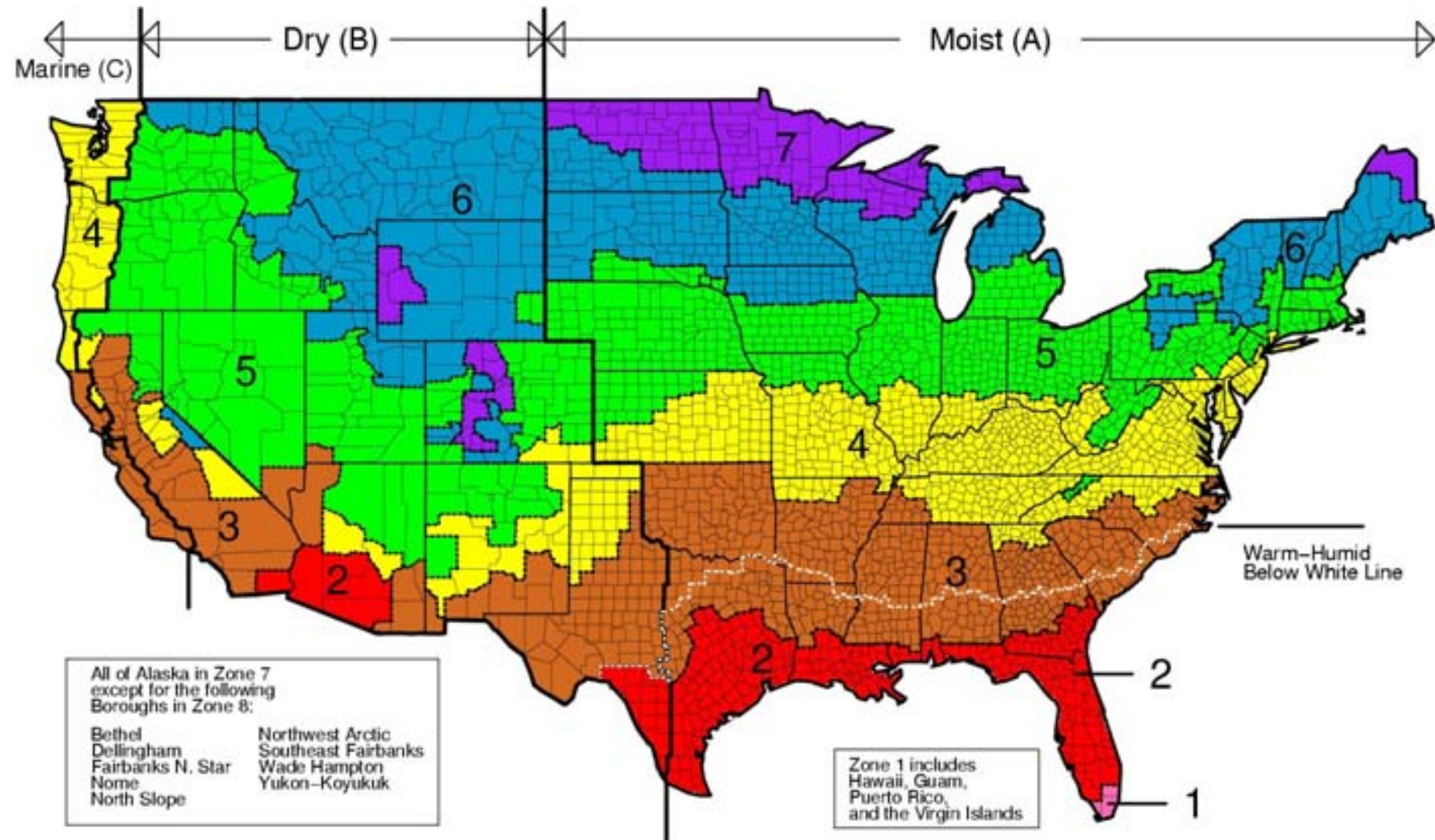


Climate Zones—Before (Even county aggregations were difficult)



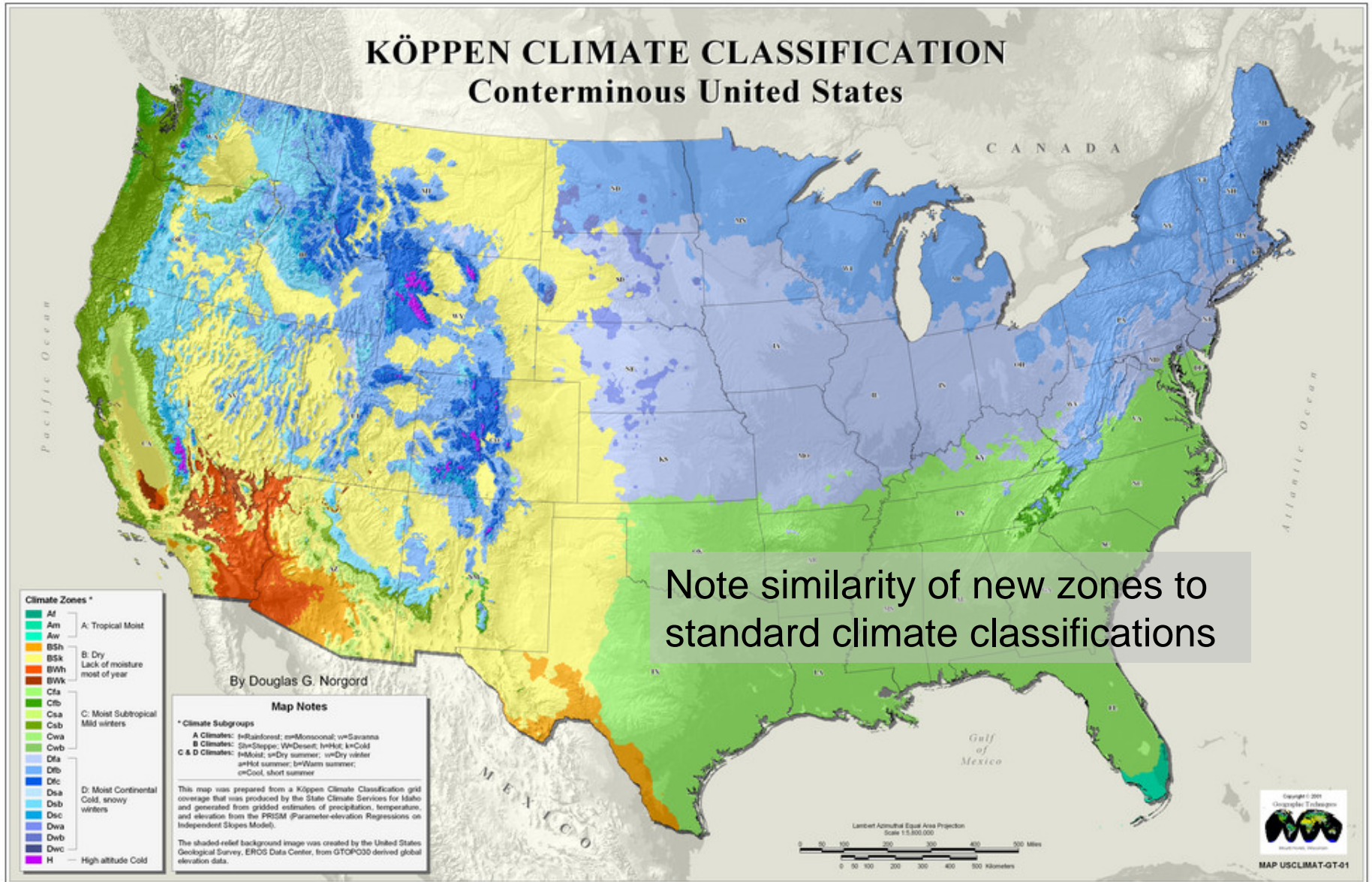
Note large number of
“boundaries” between the 19
unique zones—every boundary
is a potential battle

Climate Zones—After



KÖPPEN CLIMATE CLASSIFICATION

Conterminous United States



Note similarity of new zones to standard climate classifications

Climate Zones—After

- 8 temp regions x 3 moisture regimes = 24 theoretical zones
 - Only 17 actually occur in the U.S.
 - Moisture regimes don't apply to zones 7 & 8, so there are actually 15 unique zones in the U.S.
- Most code requirements don't distinguish by moisture regime, so there are usually 8 zones to think about
- Not all code requirements differ between all zones, leaving, in residential for example, 7 unique code-related zones

Mapping from HDD-based Zones to New Zones (each cell shows the number of cities)

Old Zone Number

New Zone Number

	1	2	3	4	5	6	7	8
1	799	250	0	0	0	0	0	0
2	0	1481	0	0	0	0	0	0
3	0	2756	227	0	0	0	0	0
4	0	5305	2052	0	0	0	0	0
5	0	1031	6410	0	0	0	0	0
6	0	0	13405	0	0	0	0	0
7	0	0	10764	1299	0	0	0	0
8	0	0	3768	7419	0	0	0	0
9	0	0	317	14473	0	0	0	0
10	0	0	39	15370	154	0	0	0
11	0	0	0	12539	2137	0	0	0
12	0	0	0	659	15469	56	0	0
13	0	0	0	0	12044	0	0	0
14	0	0	0	0	9426	427	0	0
15	0	0	0	0	1927	12744	62	0
16	0	0	0	0	0	2631	350	0
17	0	0	0	0	0	125	2605	16
18	0	0	0	0	0	0	11	113
19	0	0	0	0	0	0	0	163

Climate Zones – Final Thoughts

- New zones much easier to use
- New zones designed for code purposes—inadequate for design tools
- Others have embraced the new zones
 - ASHRAE 90.2, 90.1
 - Building America
 - Energy Star
- International application requires access to climate data